



**PATENT**  
**HES 2002-IP-008094U2**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants:	Krishna M. Ravi;	)	
	Donald L. Whitfill and	)	
	B. Raghava Reddy	)	Art Unit: 3672
		)	
Serial No.:	10/721,055	)	
		)	
Filed:	November 24, 2003	)	Examiner: Unknown
		)	
For:	VARIABLE DENSITY FLUIDS AND	)	
	METHODS OF USE IN	)	
	SUBTERRANEAN FORMATIONS	)	

**INFORMATION DISCLOSURE STATEMENT**

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

SIR:

The following documents are known to Applicants or Applicants' attorneys and are submitted for the Examiner to consider in the above-captioned application.

**U. S. PATENTS**

U.S. Patent No. 4,234,344 issued November 18, 1980 to John M. Tinsley et al.

U.S. Patent No. 4,304,298 issued December 8, 1981 to David L. Sutton.

U.S. Patent No. 4,340,427 issued July 20, 1982 to David L. Sutton.

U.S. Patent No. 4,367,093 issued January 4, 1983 to John F. Burkhalter et al.

U.S. Patent No. 4,450,009 issued May 22, 1984 to Jerry D. Childs et al.

U.S. Patent No. 4,450,010 issued May 22, 1984 to John F. Burkhalter et al.

U.S. Patent No. 4,676,317 issued June 30, 1987 to Slaton E. Fry et al.

U.S. Patent No. 4,700,780 issued October 20, 1987 to Lance E. Brothers et al.

U.S. Patent No. 4,703,801 issued November 3, 1987 to Slaton E. Fry et al.

U.S. Patent No. 4,806,164 issued February 21, 1989 to Lance E. Brothers.

U.S. Patent No. 5,124,186 issued June 23, 1992 to Joseph S. Wycech et al.

U.S. Patent No. 5,837,739 issued November 17, 1998 to Gregory P. Nowak et al.

U.S. Patent No. 6,279,652 B1 issued August 28, 2001 to Jiten Chatterji et al.

U.S. Patent No. 6,367,549 B1 issued April 9, 2002 to Jiten Chatterji et al.

U.S. Patent No. 6,457,524 B1 issued October 1, 2002 to Craig W. Roddy.

U.S. Patent No. 4,460,052 issued July 17, 1984 to Judith Gockel.

U.S. Patent No. 4,498,995 issued February 21, 1985 to Judith Gockel.

U.S. Patent No. 4,565,578 issued January 21, 1986 to David L. Sutton et al.

U.S. Patent No. 4,063,603 issued December 20, 1977 to Jerry J. Rayborn.

U.S. Patent No. 6,398,866 B1 issued June 4, 2002 to Franz Wombacher et al.

U.S. Patent No. 6,530,437 B2 issued March 11, 2003 to William C. Maurer et al.

U.S. Patent No. 6,508,305 B1 issued January 21, 2003 to Harold D. Brannon et al.

U.S. Patent No. 6,645,288 B1 issued November 11, 2003 to Bernard Dargaud et al.

**UNITED STATES PATENT APPLICATION PUBLICATION**

United States Patent Application Publication No. US 2002/0108786 A1 published August 15, 2002 to Michael V. Rowden.

United States Patent Application Publication No. US 2002/0108782 A1 published August 15, 2002 to Luc de Boer.

### **FOREIGN DOCUMENTS**

Venezuela Patent No. 52,883 dated February 14, 1992.

Venezuela Patent No. 52,882 dated February 14, 1992.

Venezuela Patent No. 53,935 dated August 28, 1992.

Venezuela Patent No. 53,936 dated August 28, 199.

### **OTHER MATERIAL**

3M Specialty Materials For the Oil & Gas Industry brochure dated June 2001.

3M™ Microspheres brochure dated September 2000.

3M Scotchlite™ Glass Bubbles brochure dated July 1999.

Expancel brochure dated 2003.

Halliburton brochure entitled "Spherelite Cement Additive" dated 1999.

Copies of the aforementioned references and Form PTO-1449 are submitted herewith.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Craig W. Roddy". The signature is fluid and cursive, with the first name "Craig" being the most prominent.

Craig W. Roddy  
Registration No. 36,256  
Halliburton Energy Services  
P. O. Box 1431  
Duncan, OK 73536-0440  
580-251-3012

<b>FORM PTO-1449 (Modified)</b>  LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT  (Use several sheets if necessary)	ATTY. DOCKET NO. 2002-IP-008094U2	SERIAL NO. 10/721,055
	APPLICANT Krishna M. Ravi et al.	
	FILING DATE November 24, 2003	GROUP 3672

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		Document No.	Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	4,234,344	11/18/80	Tinsley et al.	106	88	
	AB	4,304,298	12/08/81	Sutton	166	293	
	AC	4,340,427	07/20/82	Sutton	106	87	
	AD	4,367,093	01/04/83	Burkhalter et al.	106	87	
	AE	4,450,009	05/22/84	Childs et al.	106	76	
	AF	4,450,010	05/22/84	Burkhalter et al.	106	87	
	AG	4,676,317	06/30/87	Fry et al.	166	293	
	AH	4,700,780	10/20/87	Brothers	166	293	
	AI	4,703,801	11/03/87	Fry et al.	166	293	
	AJ	4,806,164	02/21/89	Brothers	106	90	
	AK	5,124,186	06/23/92	Wycech	428	35.8	

## FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subclass	Translation	
							Yes	No
	AL	52,883	02/14/92	Venezuela			X	
	AM	52,882	02/14/92	Venezuela			X	
	AN	53,935	08/28/92	Venezuela			X	
	AO	53,936	08/28/92	Venezuela			X	
	AP							

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	3M Speciality Materials For the Oil & Gas Industry brochure dated June 2001.
AS	3M™ Microspheres brochure dated September 2000.
AT	3M Scotchlite™ Glass Bubbles brochure dated Jul 1999.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.  
 Include copy of this form with next communication to applicant.

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EXAMINER INITIAL		Document No.	Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	5,837,739	11/17/98	Nowak et al.	521	54	
	AB	6,279,652 B1	08/28/01	Chatterji et al.	166	194	
	AC	6,367,549 B1	04/09/02	Chatterji et al.	166	292	
	AD	6,457,524 B1	10/01/02	Roddy	166	293	
	AE	4,460,052	07/17/84	Gockel	175	72	
	AF	4,498,995	02/12/85	Gockel	252	8.5 LC	
	AG	4,565,578	01/21/86	Sutton et al.	106	87	
	AH	4,063,603	12/20/77	Rayborn	175	65	
	AI	6,398,866 B1	06/04/02	Wombacher et al.	106	823	
	AJ	6,530,437 B2	03/11/03	Maurer et al.	175	5	
	AK	6,508,305 B1	01/21/03	Brannon et al.	166	293	

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							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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*U.S. PATENT DOCUMENTS*

EXAMINER INITIAL		Document No.	Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	6,645,288 B1	11/11/03	Dargaud et al.	1056	696	
	AB	US 2002/0108786 A1	08/15/02	Rowden	175	57	
	AC	US 2002/0108782 A1	08/15/02	Boer	175	7	
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

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